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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,997	06/26/2001	Tsukasa Yagi	15162/03790	9619

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EXAMINER

NGUYEN, HOAN C

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,997

Applicant(s)

YAGI ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 27-29 is/are pending in the application.
4a) Of the above claim(s) 6-26 and 29-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 27-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Preliminary Amendment received on Aug. 16, 2001 for correcting Drawings and Specification is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi (US4920409A).

Here, scanning electrodes are interchanged with signal electrodes in reference of Yamagishi for vertical and horizontal choices.

In regard to claims 1-3, Yamagishi teaches (Fig. 1) a liquid crystal display apparatus comprising:

- a liquid crystal layer comprising liquid crystal;
- a plurality of first scanning electrodes Y1-Y7 aligned in a first direction at a first pitch, each of the first scanning electrodes extending in a second direction substantially orthogonal to the first direction;
- a plurality of signal electrodes X1-X3 facing the first scanning electrodes with the liquid crystal layer sandwiched between the signal electrodes and the first

scanning electrodes, the signal electrodes being aligned in the second direction at a second pitch wider than the first pitch and each of the signal electrodes extending in the first direction.

wherein

- pixels are formed at intersections of the first scanning electrodes and the signal electrodes; and each of the pixels is a rectangle of which shorter sides are parallel to the first direction and of which longer sides are parallel to the second direction (claim 2).
- a width of each of the first scanning electrodes defines a length of the shorter sides of each of the pixels; and a width of each of the signal electrodes defines a length of the longer sides of each of the pixels (claim 3).

wherein the first pitch is $1/n$ of the second pitch, wherein n is 2 (claims 4-5).

Yamagishi discloses the claimed invention except for inversely arrangement of the scanning and signal lines.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the scanning and signal lines for designed choice of vertical and horizontal images, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

2. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi (US4920409A) as applied to claims 1-5 above in view of Masazumi (US6414669B1).

Yamagishi fail to disclose features claims 27-29.

Masazumi teaches a liquid crystal display apparatus comprising the liquid crystal having a memory effect (claim 27) wherein the liquid crystal exhibits a cholesteric phase (claim 28) and comprises a nematic liquid crystal compound and a chiral agent (claim 29) retaining the display states of the liquid crystals if the deselect signal is held below the prescribed threshold voltage.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display apparatus as Yamagishi disclosed with the liquid crystal having a memory effect (claim 27) wherein the liquid crystal exhibits a cholesteric phase (claim 28) and comprises a nematic liquid crystal compound and a chiral agent (claim 29) retaining the display states of the liquid crystals if the deselect signal is held below the prescribed threshold voltage for achieving a further reduction in driving time (col. 2 lines 33-34).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Ishida et al. (US6476899B2) disclose a display layer for performing display; a flexible substrate for holding or carrying the display layer; a transparent electrode

formed on the flexible substrate; and a metal film formed on the flexible substrate, electrically connected to the transparent electrode and made of a material different from that of the transparent electrode.

Bongaerts et al. (US5696569A) disclose a plasma-addressed electro-optic display device comprising (1280×3) columns and 1024 rows, and with a channel pitch $p=312.5\mu\text{m}$, a height $h=100\mu\text{m}$, and electrode widths $w=50\mu\text{m}$, the interelectrode spacing $d=100\mu\text{m}$.

Yanagisawa (US5128786A) discloses a liquid crystal display device includes a pair of substrates opposed to each other, a plurality of first electrodes provided on one of the paired substrates, a plurality of second electrodes mounted over the other base plate to oppose the first electrodes, liquid crystal material interposed between the first and the second electrodes to form a plurality of image elements at a plurality of positions corresponding to those points of the first and second electrodes which are opposed to each other, and a black mask for shielding light from leaking through clearances between the adjacent image elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

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April 16, 2004

HOAN C. NGUYEN
Examiner
Art Unit 2871

A handwritten signature in black ink, appearing to read 'Dung T. Nguyen', with a stylized, cursive script.

DUNG T. NGUYEN
PRIMARY EXAMINER